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# Some Papal Bull: 16th Century Alum trade and English Royal Autonomy

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Some Papal Bull:  
16<sup>th</sup> Century Alum trade and English Royal Autonomy

**Abstract**

The early 16<sup>th</sup> century saw the rise of a wealthy middle class fueled by the global textile industry. Many men made their fortunes off of this trade, so it is not surprising to consider that not all of these trades were legal. In this essay, I shall be looking at the popular alum trade in Italy, Spain, and England from the 14<sup>th</sup> to the 17<sup>th</sup> centuries and how the lucrative trade shaped their early modern economies, societies, and methods of ruling. Because of the importance of alum, many Christian rulers contested the Pope's regulation of the commodity, even going so far as to import it illegally. By the beginning of the 16<sup>th</sup> century, Henry VII had started an illegal alum racket, the pope had declared his monopoly "holy", and Spain profited from both while gradually exploiting the New World for its resources. As one of the first and most important global commodities, the Pope's maintenance of an alum monopoly contributed to growing distrust for the Catholic faith in the 16<sup>th</sup> century.

**Intro**

Historians generally acknowledge the difficulty of working with early modern textiles due to their fragility and scarcity. Few textiles are left over in museums from before the 17<sup>th</sup> century. That is not to say that copes, hats, gloves, and an absurd number of shoes do not appear from this period, but because of fabric's enormous worth before the invention of the Jacquard loom<sup>1</sup>, it was repeatedly reused until little remains in the way of people's everyday wear. The 1630s through 50s constitute a gap in English textile history. Not only are the king and queen's

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<sup>1</sup> The Jacquard Loom used a punch card system to speed up the weaving process. Its creation was the first big step into mechanizing the garment industry and simplifying patternmaking. It is still used in factories today.

wardrobe accounts from those years in poor repair, if they exist at all due to Henry VIII's quick turnover of queens in that period and poor management, but the dissolution of the monasteries saw thousands of liturgical vestments destroyed for the gold and silver threads worked into them. Later, Oliver Cromwell's revolution saw the melting of all of the Tudor Crown jewels and the auctioning of the royal wardrobe to individual buyers whose identities and possessions have since faded from view.<sup>2</sup> While each of these unique acts contributes mightily to the lack of clothing remaining from Henry VIII's extensive collection and largely to the lack of clothing from the Tudor period in general, there is more to the story. The 16<sup>th</sup> century also saw the rise of a burgeoning middle class, fed from the labors of early mercantilism, so their high-quality garments, purchased with income from this trade, should not have disappeared, especially when the V&A and British museum boast plenty, if not a plethora of garments that are hundreds of years older. The culprit of this textile lack is, not surprisingly, Henry VIII himself. In the course of this essay I would like to argue that Henry VIII's reformation had a larger effect on fabric production in England than may have previously been considered due to the unusual trade of a most important facet of the textile trade: alum.

### **What is Alum?**

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<sup>2</sup> 30 August 1654, 'Wm. Thomas, keeper of the late standing wardrobe at Windsor, to deliver to Clement Kinnersley all hangings and other wardrobe stuff contained in his book of charge, and not yet delivered to the contractors for sale of the late King's goods, to furnish the Speaker's room adjoining the Parliament House'.



Fig. 1<sup>3</sup>

Alum, also known as potash alum, is a dye mordant. A mordant, from the Latin *mordere*, meaning "to bite", fixes dye to cloth so that the dye does not run or fade when the fabric is washed or exposed to light. Mordants form a coordination complex with the dye via "metal atoms that attach to the dye at the oxygen and nitrogen atoms through formation of coordinate bonds"<sup>4</sup> This process can also change the coloring of the cloth to a darker, more permanent, and generally more desirable shade, as well as assist in tanning leather, in medicines, paints, and other similar coloring processes. Its effect may be studied on historical textiles of several different periods, as alum has been used for a textile mordant since at least 200BC. Historian Ines Bogensperger notes that the ancients were also aware of Alum's capacity as a dye mordant: "Although Pliny the Elder and Dioscorides mainly discuss medical practices, semi-literary documents reveal another use: a scissile kind of alum is explicitly mentioned in a dyeing recipe for the water-insoluble alkanet"<sup>5</sup>

Pliny explicitly details the uses for several types of Alum in his *Natural History*:

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<sup>3</sup> Alum Podcast, Chemistry World

<sup>4</sup> <https://www.sciencedirect.com/topics/chemistry/mordant>

<sup>5</sup> Ines Bogensperger. Alum in Ancient Egypt: The written evidence: Excavating, analysing, reconstructing Textiles of the 1st millennium, from Egypt and neighbouring countries, 2017.

"though the uses made of them are very dissimilar; the white liquid alumen being employed for dyeing wool of bright colours, and the black, on the other hand, for giving wool a tawny or a sombre tint. Gold, too, is purified by the agency of black alumen. Every kind of alumen is a compound of slime and water, or in other words, is a liquid product exuding from the earth; the concretion of it commencing in winter, and being completed by the action of the summer sun. That portion of it which is the first matured, is the whitest in appearance. The countries which produce this substance, are Spain, Ægypt, Armenia, Macedonia, Pontus, Africa, and the islands of Sardinia, Melos, Lipara, and Strongyle: the most esteemed, however, is that of Egypt, the next best being the produce of Melos."<sup>6</sup>

For the purpose of this paper, I define alum as the hydrated double sulfate containing aluminum, among other substances. "Alum" in the early modern context is a considerably less pure substance than what is available today.<sup>7</sup> Alum provides important information for textile conservation as it can be examined for the most part without destroying the original fabric, and with certain dyes, due to the existence of early dye books and recipes, its presence may be assumed. As a study on 14<sup>th</sup>-16<sup>th</sup> CE illuminated manuscripts claims:

In all cases, the identification of carmine or madder was not achieved by chemical means but it is assumed on the basis of the historical information and on the presence of aluminum which is extremely relevant. Al element can originate from alum, the inorganic substrate used to fix the dye, and reinforces the idea that an alum-based insect or plant lake was used.<sup>8</sup>

There are several different types of mordant, but even up to the present, alum is still the most common fixative and popular mordant in part because of its flexibility, allowing it to be added in any part of the dye process. In addition to Alum, other mordents also appear with less frequency:

"Any plants containing sufficient tannins can be used to achieve colorfast fabrics without additives, known as mordants. But there are also natural mordants, such as rhubarb, sumac,

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<sup>6</sup> Pliny the Elder 35.52

<sup>7</sup> I have yet to discover whether one may be able to trace the specific type of alum used to a specific mine or general location, although I have reason to believe it might be possible to date the alum used which helps to identify the time a textile was created. If a textile shows evidence of having been dyed, but without alum, that is yet more information available to the discerning textile historian. I hope to research this more in the future.

<sup>8</sup> Pigments & dyes in a collection of medieval illuminations (14<sup>th</sup>–16<sup>th</sup> century)

Aurélie Mounier . First published:05 June 2017

<https://doi.org/10.1002/col.22146>. Funding information: Aquitaine region (France); University of Bordeaux Montaigne/CNRS; LaScArBx Cluster of Excellence; French State managed by the National Research Agency under the program Future Investments; Grant number: ANR-10-LabX-52.

pomegranate rinds, lemon juice or vinegar"<sup>9</sup> Still, these will fade more quickly than with use of a chemical mordant. In a recent study, "all samples of the alum-mordanted wool examined clearly showed aluminum to be present, even when a single fiber was examined." (3)<sup>10</sup>



Fig 2. Alum in tanning<sup>11</sup>

Rather than adding the mordant to the fabric first or after the fabric was dyed, each action of which produces a different color and quality with most mordents, early people discovered that alum has the unique property of being able to be added to the dye process at any stage, allowing individual dyers more freedom not to worry about the longevity of their wares if left unattended. In the 16<sup>th</sup> century English people tended to dye their primary textile export, wool, with alum mixed in with their dye, because wool takes particularly easily to mordanting and it saved them

<sup>9</sup> <https://www.timesfreepress.com/news/life/entertainment/story/2014/apr/21/natural-dyes-look-yard-or-kitchen/137835/>

<sup>10</sup> Koestler, R. J., R. Sheryll, and N. Indictor. "Identification of Dyeing Mordants and Related Substances on Textile Fibers: A Preliminary Study Using Energy Dispersive X-Ray Spectrometry." *Studies in Conservation* 30, no. 2 (1985): 58-62. Accessed June 3, 2020. doi:10.2307/1506089.

<sup>11</sup> Image from Cheryl Porter's, The use of Alum in the preparation of tawed skin for book covers in the 11<sup>th</sup> – 15<sup>th</sup> centuries: advantages and disadvantages for the book structure

time in the dye process, unlike cotton which does not take as easily to mordant dyes. Recipes from Hispanic craft books, *Segreti per Colori*, as well as the *Innsbruck Manuscript* give modern readers an idea of how necessary alum was to the dye process in Europe. Nearly all of the recipes included in these three sets call for alum in some form and at a different time in the process.

Whether in the middle of the process with Roche alum as *Segreti per Colori's* recipe for *verzino* states:

To dye kidskins with verzino.--Take kidskins and wash them and press them well with the hand as much as necessary, and then take 9 oz. of verzino well pounded, and add to it 24 bocali full of plain water, and 1 bottle of water of quick-lime which lime must be slaked with a little, that is to say, half a glass, of lye made from the ashes of the vine, and when you see the lime begin to smoke, add to it three bocali of lime water, and pour it into the verzino and let it boil until it is reduced one-third; then strain it and spread the skins one upon another. Then take 4 oz. of roche alum with 4 bocali of water, and dissolve the alum in the water over the fire, and when the water is tepid, apply it lightly on both sides of the skins with a paintbrush gently, giving them one coat only; then set them to dry in the shade, until they are half dry. Next take the said verzino and make it boil for a quarter of an hour, and then remove it from the fire...<sup>12</sup>

Or at the end of the process likely with powdered alum as the Innsbruck manuscript notes for red dye:

Take chalk in a pot and pour water thereon and mix it well together and let it sink to the bottom of the pot so that the water becomes clear and and take that same water and boil the brazilwood well therein, until it is cooked and then mix in alum and with it dye red *zendel* (a thin silken material).

These particular recipes, as well as many of the others, detail the type of cloth being dyed as important in determining how the alum is added and when in the process. Silk for example, takes the color it is given quite easily, whereas in order to get a good shade kidskin needs to be treated in several different ways as other recipes for different colors note. Also revealed in the recipes, are notes on how to get different shades of a color, whether through ground and boiled crab

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<sup>12</sup> 323, <http://www.elizabethancostume.net/dyes/secreti.htm>

shells for red, cinnabar, brazil wood, or lead oxide.<sup>13</sup> The primary points where alum's addition processes seem to change purposefully are with different dyes and materials being dyed, rather than at what point alum is added to the process in the case of any particular material. For example, it is much easier and uses up less of an expensive ingredient to add alum in the middle of the process for kid skins, because then it can bond to both layers of *verzino* while the skins are slightly damp, instead of needing to be added twice, once at the beginning and once at the end. From what I can tell therefore, alum does not change the color of a fabric depending on when it is added, a fact that early modern people were aware of, although a fabric's fade may change depending on how much alum is used.



fig. 3 Alum Production<sup>14</sup>

Alum was particularly important to the English wool industry, because Alum dramatically improves the color "sticking" in wool. The water-insoluble complex of tannins and

<sup>13</sup> Red, Innsbruck Manuscript. <http://www.elizabethancostume.net/dyes/innsbruck/>

<sup>14</sup>Image from Martin and Günster



proteins in wool must bind to a water-soluble dye so that the fabric can be washed in the future without losing its color. Alum improves the wool and dye's respective affinities for each other so that no color is lost. Pliny notes his own experiment with mordant dyes:

Although the dye in the pan is of one uniform colour, the material when taken out of it is of various colours, according to the nature of the mordents that have been respectively applied to it: these colours, too, will never wash out. Thus the dye-pan, which under ordinary circumstances, no doubt, would have made but one colour of several, if coloured tissues had been put into it, is here made to yield several colours from a single dye. At the same moment that it dyes the tissues, it boils in the colour; and it is the fact, that material which has been thus submitted to the action of fire becomes stouter and more serviceable for wear, than it would have been if it had not been subjected to the process<sup>15</sup>

Ideally in the early 16th century, alum was created from alunite, which could appear in various purities depending on where it was mined, or as alum shale, both of which had to be further purified to their later forms, aluminum sulfate and ammonium alum. Early modern prospectors, however, preferred alunite because its volcanic beginnings made the process of extracting aluminum sulphate from the rock easier than from alum shale. Alunite's ore of aluminum sulfate then had to be extracted from the stone by careful heating processes. Alum was also found in small quantities naturally, but was of a lesser quality and quantity and generally only available from the Egypt and the Yemen. As the "Whatmans and Wovepaper" essayist notes: "crude aluminium sulphate... needed skilled treatment to convert it into ammonium alum [Ammonium double salt]. Urine was added to it, the solution boiled and the alum allowed to crystallize out of it on cooling".<sup>16</sup> These crystals were then added to the dye process. Notably, because Alunite only occurs in sites of volcanic activity<sup>17</sup>, resources in Europe were limited before the wider introduction of shale manufacture, which would only come to England at the very end of the 16<sup>th</sup> century.

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<sup>15</sup> Pliny the Elder 35.42

<sup>16</sup> Whatman's wove paper

<sup>17</sup> The Leather Manufacturer, Volumes 31-32

## The rise of European Alum

Prior to the 15<sup>th</sup> century, much of Europe bought its quality alum from Asia, with Venice often acting as the middle-man for alum passing from Eastern to Western markets due to Venice's control over the Levant. "In the fifth century BC King Amassis of Egypt is said to have sent to Delphi 1000 talents of alum, equivalent to 26 tons (Herodotus *Histories* 2.180)"<sup>18</sup> A translated list of "spices" dated somewhere between 1310 and 1340 included in Francesco Pegolotti's *Merchant's Handbook* lists the different types and qualities of alum available to the discerning buyer:

- Caballine [black] aloes
  - Rock alum of Karahissar
  - Choice alum of good alum works
  - Phocaea alum
  - Kutahieh and Ayassolük alum
  - Ulubad alum
  - Cyzican alum, cord alum, Diaschilo alum; these three are the worst brands and the worst qualities
  - Processed alum in scales
  - Castile alum
  - Sugar alum
  - Vulcano alum
  - 'Alum' from wine lees [tartar]<sup>19</sup>

Although "Choice Alum of Good Alum Works" may not be particularly indicative of where it came from, Pegolotti clearly knows that alum in this time period is going through processing for purity and that those "works" increase its value. Additionally, he indicates the worst qualities of alum as well as the different ways the same product might be sold as a powder (sugar alum), a rock/crystal, by weight (scales), or Vulcano (Volcano) Alum (likely some form of Alunite

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<sup>18</sup> Effie Photos-Jones (2018) *From mine to apothecary: an archaeo-biomedical approach to the study of the Greco-Roman lithotherapeutics industry*, World Archaeology, 50:3, 418-433, DOI: [10.1080/00438243.2018.1515034](https://doi.org/10.1080/00438243.2018.1515034)

<sup>19</sup> Medieval Trade in the Mediterranean World: Illustrative Documents

needing purification). Notably, Castilian Alum appears within this list, although it will disappear from such obvious view in the next centuries, as I will discuss later in this paper. However, for the time Castilian Alum's appearance proves that lower-brand alum trade was also occurring in Muslim Spain and likely traveling through Africa as this early map of Moroccan trade routes indicates:



Fig 4. Moroccan Map from the Kasba Museum in Tangiers

Published first in 77AD, Pliny the Elder notes in his *Natural History*—one of the largest works of Roman literature surviving and available to early modern people—the methods for determining the quality of an alum by ensuring that it changes color:

Liquid alumen, to be good, should be of a limpid, milky, appearance: when rubbed between the fingers it should be free from grit, and productive of a slight sensation of heat. The name given to it is "phorimon." The mode of detecting whether or not it has been adulterated, is by the application of pomegranate-juice; for if genuine, it will turn black on combining with the juice. The other, or solid alumen, is pale and rough in appearance, and turns black on the application of nut-galls<sup>20</sup>

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<sup>20</sup> 35.52 Plin. Nat.

Nutgalls were often used in tanning leather, the recipes for which tend to be more complex than cloth's so their application to test the purity of alum is understandable. Clearly, even in ancient times, alum's trade was lucrative enough for people to try to falsify the product and for Pliny to believe documentation on how to determine alum's quality to be worthwhile. Even Chaucer mentions alum and various methods for mordents and dyes in his *Canons' Yeoman's Tale*

Chalk, quicklime, ashes and the white of eggs,  
 Various powders, clay, piss, dung and dregs,  
 Waxed bags, saltpetre, vitriol and a whole  
 Variety of fires of wood and coal;  
 Alkali, tartar, salt in preparation,  
 Matters combust or in coagulation,  
 Clay mixed with horse-hair, sometimes with my own,  
 Crystallized alum, oil of tartar thrown  
 With tartar crude and unfermented beer<sup>21</sup>

Chaucer intentionally mystifies the Canon as an alchemist, seemingly mentioning a series of expensive, but unrelated items. Chalk, quicklime, ashes, the whites of eggs, etc. all appear in recipes for tanning and pigment creation, specifically in creating parchment, exactly the kinds of tools Chaucer himself needs. As evidenced by the many different types of alum circulating Europe up to the 15<sup>th</sup> century, purity and price went hand in hand and people were willing to pay exorbitant amounts for the highest quality alum.

With the Italian renaissance in full swing by the beginning of the 15<sup>th</sup> century and more importantly, the global textile market becoming a decidedly more lucrative trade, Europe was finally ready to discover its own mordant processes. Due to Marco Polo's travels on the silk road and a flourishing European economy fueled by wealthy princes, Europeans now had a hunger for rich exotic silks and brighter colors necessitating a new supply of dye mordents.

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<sup>21</sup> Nevill Coghill translation

## Papal Alum

Because the purest alunite and shale occurs in volcanic areas, Italy would soon become the center of the European market. Previously, the trade of this valuable commodity brought Venice much of the revenue the city-state used to remain an independent republic until Medici rule in the 1400s. The Ottoman-Venetian wars partially disrupted the supply chain and, coinciding with papal commissioner Giovanni di Castro's discovery of Alunite in the Tolfa mountains in 1460, allowed the pontificate control over one of Europe's most valuable goods.<sup>22</sup> Certain cardinals and bishops were given control over these mines, and eventually Pius II granted a full monopoly to the Medici family who used their revenue to place themselves in positions of power, all of these actions leading to the rise of the Papacy's control over European alum.<sup>23</sup>

dell'allume romano. Tra il 1489 e il 1491, durante l'appalto dei genovesi Niccolò e Paolo Gentili, il minerale era consegnato per la maggior parte ai de' Medici, quindi ai Gentili, ma anche ai Centurioni, ai Sauli e agli Usodimare. Nel marzo 1500 i genovesi Domenico Centurioni, Battista Spinola e Paolo Sauli e il fiorentino Stefano Ghinucci si univano in società per il commercio di 2.100 cantari di allume, indicando quale institor dell'accordo lo stesso Paolo Sauli; il contratto era poi ribadito nel 1501 e nel 1504. Dopo di che, assieme ai Grimaldi, ai di Negro e ai Pallavicini, i Sauli parteciparono direttamente allo sfruttamento delle ricche miniere d'allume di Tolfa dal 1531 al 1578. E tra il 1553 e il 1565 papa Paolo III Farnese concesse alla famiglia genovese nella persona di Bendinelli Sauli l'appalto unico delle miniere, che in questo periodo raggiunsero i livelli massimi di produzione, con oltre 37.000 cantari.<sup>24</sup>

My poor translation: Of the Roman Alum. Between the dates 1489 and 1491, during the contract of the Genoese Niccolò and Paolo Gentili, the ore was mostly delivered to the de' Medici, then to the Gentiles, but also to the Centurions, Saulis and Usodimare. In March 1500 the Genoese Domenico Centurioni, Battista Spinola and Paolo Sauli and the Florentine Stefano Ghinucci joined in society for the trade of 2,100 alum cantari, indicating as the institor of the agreement Paolo Sauli himself; the contract was then repeated in 1501 and 1504. After that, together with the Grimaldi, di Negro and Pallavicini, the Saulis participated directly to the

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<sup>22</sup> "Who were the miners of Allumiere? A multidisciplinary approach to reconstruct the osteobiography of an Italian worker community". Baldoni M., Scorrano G., Gismondi A., D'Agostino A., Alexander M., Gaspari L., Vallelonga F., (...), Martinez-Labarga C.(2018) PLoS ONE, 13 (10) , art. no. e0205362

<sup>23</sup> The Renaissance: All That Matters, By Michael Halvorson

<sup>24</sup> Fara, A. (2016). Credit and citizenship: The sauli, genoese bankers in rome in 15th-16th century. *Reti Medievali Rivista*, 17(1), 71-104.

exploitation of the rich alum mines of Tolfa since 1531 to 1578. And between 1553 and 1565 Pope Paul III Farnese granted the family Genoese in the person of Bendinelli Sauli the single contract for the mines, which in this period reached the maximum levels of production, with over 37,000 cantari.

The Societas Aluminium, termed a cartel arrangement by economists Martin and Günster, gradually restricted the other sources of alum for Europe, namely Florentine, Turkish, and Neapolitan alum as the three other areas producing high-quality alum in large quantities.<sup>25</sup>



Fig. 5 Potash Alum Mines at Tolfa 1630 by Pietro de Cortona

Despite the papacy's fortunate windfall in the 15<sup>th</sup> century, evidence suggests that the Greeks and Romans knew about the alum their countries were rich in, although the recipe for extracting alum from alum shale remained a closely guarded secret. As Ancient Greek geographer Strabo writes of the virtues of the volcanic Lipari Island in Italy: "It possesses a fertile soil, and mines of alum easy to be wrought, hot springs, and craters."<sup>26</sup> The methods used for purifying the Alunite also seem to have been available the ancients, if forgotten before the 15<sup>th</sup> century, as French Naturalist Dolomieu posits in his book about his visit to the island compared to Strabo's geography:

<sup>25</sup> Sacred Trust: The Medieval Church as an Economic Firm

<sup>26</sup> 6.2 Strabo, *Geography*

Il est probable que les Liparaeens tiroient cet alun par la lixiviation des terres exposées vapeurs acido ~ sulfureuses du volcan leur île.... Ce genre d'industrie et commerce a totalement disparu; il n'y a plus de manufacture d'alun dans toute leur île Peut-être les terres y sont-elles moins propres depuis l'extinction des volcans.<sup>27</sup>

My poor Translation: It is likely that the Lipareans pull[ed] this alun by lixiviating<sup>28</sup> the exposed earth in the sulfurous acid vapors of their island volcano. This kind of industry and trade has totally disappeared; there is no more alun manufacture on the whole island. Perhaps the earth there is less suitable since the extinction of the volcanoes.

It seems likely that either the Roman's supply of Alunite ran low without an active Volcano, or simply that by the 15<sup>th</sup> century the Tolfa alun works had supplanted their less lucrative neighbor.

The papacy justified the monopoly of European alun as funding for crusade against the Ottoman Empire. In reality, the funds serviced several different causes throughout the mines' existence. The Pope's obvious link to worldly goods and money was used to undermine his spiritual authority as a new globalized mercantilism came into conflict with a unified Christian church. The Ottoman Empire posed one of the only threats to a papal monopoly:

He [the Pope] willingly devoted, set aside, granted and put to use each and every profit from alun and revenue from the old mine at Tulphis, which was established under the temporary dominion of the church, and which were to be given for the glory of [Christ] himself, and of the faith, and of the faithful, and for the work and benefit of the Holy Cross; and with ready heart he dedicated them to God Almighty; and to carry out this great endeavour in preserving and distributing that same commodity, he appointed the most Reverend fathers<sup>29</sup>

The Appointment of loyal bishops and cardinals to carry out the sale of alun, Allowed the Pope to justify the monopoly on religious rather than economic grounds, diminishing the appearance of a purely mercenary interest. While the alun trade was certainly lucrative, the pope needed to distance himself from the economic side of the alun market gave him, allowing him to appear to

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<sup>27</sup> Strabo...Google Books

<sup>28</sup> Wove Paper notes lixiviation [heating until ore is molten] of alunite as the primary way in which the alun ore was extracted from the rock at the Tolfa mines as well.

<sup>29</sup> Index...A Holy collusion...





people the right to import alum from anywhere, only for his edict to be swiftly revoked upon a threat of excommunication.<sup>32</sup> Similarly, in 1467 As Ferdinand of Aragon was forced to concede his alum trade when the Pope interceded with him regarding Ischia's<sup>33</sup> and Castile's alum mines and markets:

Our Most Blessed Lord carefully considered that the price of the same alum being dedicated to the same holy task was being greatly diminished by the fact that alum from the Ischian mine, belonging to the most serene prince the lord Ferdinand, King of Sicily, was also being supplied to those same parts of the world to which the alum of the Cross had been supplied or, more frequently, which bordered on those places, with the result that, because of the combined quantity and abundance, the price of either [commodity] was being restricted or was dropping, and his appointed contribution for the Holy Cross was providing very little profit. The aforementioned most Serene Highness the King, realised this and approached his Holiness; then his Holiness freely gave his consent and approval<sup>34</sup>

While Ferdinand's actions may have seemed noble, economists Martin and Günster explain that the "Most Catholic King" of Spain had little choice in the matter, despite his years of service to the church<sup>35</sup> crusading against the Moors and Jews in Spain. Ferdinand's continued trade in alum provoked enmity from some of the most influential people in Europe. As seen in the above document, Ferdinand was finally forced to approach his holiness about artificially raising the price of Tolfa's alum by restricting his own mines productivity. He eventually sold his mines completely and, over just a few years, Italian interests had bought up the main Spanish holdings of alum. Yet even with his most productive mines closed, Ferdinand did not relinquish the power to set the price of alum easily as I hope to expand upon in further essays.

## **Henry VII and alum**

A specific court case involving alum in England initiated one of the greatest rackets in the early modern period. Henry VII's dealings with alum forced the pope to resort to piracy in

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<sup>32</sup> The Guardian of Liberty, Volumes 3-7

<sup>33</sup> Volcanic island off the coast of Italy near Naples

<sup>34</sup> Index...A Holy collusion...

<sup>35</sup> For their crusade against Islamic and Jewish holdings in Spain, the Pope granted Ferdinand and Isabella the title.

order to maintain control of the supply. Writing to Pope Innocent VIII in 1486 about a dispute over a Spanish vessel trading illegal alum from Italy, "Gio. Ambrosio maintained, exhibiting a bull of Pope Sixtus, whereby all purchasers and exporters of alum from Piombino are excommunicated and heretics, that the Florentine should not be listened to, as he was excommunicated. In virtue of this, and by many arguments, Gio. Ambrosio showed that the alum was forfeited to the Apostolic treasury."<sup>36</sup> Clearly Pope Innocent VIII's monopoly was not only lucrative, but also enforceable, as the Pope sent an Italian ambassador to England, where the ship was being held, specifically to return the Piombino alum. With the threat of excommunication, which would have forbidden those selling alum from hearing mass, burying their dead, or entering church services, looming, Christians were unlikely to wish to trade in the goods, knowing the reach of the apostolic See. Because there is documentation of alum smugglers being caught and punished for their infractions, this particular piece of legislation would seem to be more substantive across Europe than many similar laws. In other words, when it came to assuring the alum monopoly, the Papacy put considerable efforts into putting its money where its mouth was.

Indeed, one might consider the church's control over alum to be rather similar to the United States' State law versus federal law. A person might be tried by either a secular court or by an ecclesiastical court depending on their crime and the persons involved, but generally cases move from the region in which the offense is committed to a higher court linearly. Usually the church court is considered the highest law and officials acting for the pope had the right to be tried in the less punitive church court. Such was not the case Gio. Ambrossio encountered in England after his seizure of a shipment of alum from another location in Italy. Indeed, his chartering of English boats to effectively pirate the alum from the Spanish ship was considered

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<sup>36</sup> Letters and State Papers

illegal in England through a series of loopholes, including the maintained English right to search any ships for papal bulls and declare them void under national law:

"In actis publicis regni Angliæ diploma invenitur cuidam Vaietono a Rege Richardo II concessum ad perscrutanda singula navigia ad executiendos illos qui bullas et alia Papalia instrumenta deferebant" Exactis in H. Garnetuin p.153, 154—"Eduardo III regnante omnes portus ex regis mandato ad bullas in tercipiendas fuerunt obsevati" Tom II p. 727 <sup>37</sup>

Because England in the late 15<sup>th</sup> century had no laws in support of the papal alum monopoly, when a Spanish ship was waylaid by Englishmen following the papal authority, then brought to English port carrying a significant supply of Piombino alum, Henry VII was able to argue (to his own benefit) against the papal ambassador that he was unable to uphold the papal bull because "First, that there was no prohibition against bringing alum to England. Secondly, that in his time no bulls had been read or published relative to the matter in his kingdom. Thirdly, that the capture of the ship, unknown to the King, and without his consent, was an act which could not be borne, and which ought not to remain unpunished."<sup>38</sup> Before 1486, there is little evidence to suggest that England involved itself in the alum trade beyond buying up alum from Tolfa, which Henry VII and his son Henry VIII would continue to do for many years. However, with the success of the court case, and the obvious wealth to be made from control of alum's supply chain, Henry would only become more daring.

By the well-kept English Letters and Papers, Foreign and Domestic in Volumes 1-5, detailing fines owed to the crown, it is clear that the papal bull not only prohibited Christians from trading alum except for Tolfa's, but that for the most part that prohibition bore fruit. As Thomas Penn, writes in his well-known biography of Henry VII, *The Winter King*, Henry VII was popularly known as "the accountant king" because of his meticulous record keeping and

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<sup>37</sup>267. Report from the Select Committee Appointed to Report the Nature and Substance of the Laws and Ordinances Existing in Foreign States (etc.). Google Books

<sup>38</sup> 1486, letters and state papers

economic reform which saw the nobles increasingly taxed and the Crown's coffers filled.<sup>39</sup> His economic foreign policy grew him a reputation as a miser and a cheat especially in his dealings with Ferdinand of Aragon and Philip the fair over dower negotiations and the infamous treaty of Windsor. 1503 saw Pope Julius II's outrageous inflation of papal alum reach intolerable levels causing "an economic slump in the Low Countries and forced the Habsburgs Maximilian and Philip to flout Papal decrees and deal with the Muslims"<sup>40</sup> At this point in history the Hapsburg naval power was negligible, and because Maximilian's title and land holdings were supposedly part of an election process and papal crowning, the Holy Roman Emperor and heir apparent, Philip, required Henry VII's help to flout the papal bull.<sup>41</sup> Using his ships Sovereign and Regent built in 1488<sup>42</sup> in use up until 1521 and 1513 respectively.<sup>43</sup> The Regent weighing in at 1,000 tons and Sovereign at 800 tons (of the information still known about the early tudor navy) constituted two of Henry's largest and best gunned ships, signaling the importance he placed on acquiring alum. In 1504, Henry entered into the "Frescobaldi deal" with these two ships, brokered by Ludovico della Fava and customs official Edmund Dudley, who both helped the king store and distribute the illicit goods as recorded in the transactions of the Royal Historical Society:

In the minute inventory 2 of the things in his house in 'Candelwykstrete,' when Sir Henry Marny records that in the 'Gret Galare' there were stacked ' . 79 brode white clothes, 21 bagges of peper, 2 bagges of garveling of peper of no valure, . . . o remnandes of coton, 46 bagges of alome, 26 elles of canvas yerd brode'<sup>44</sup>

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<sup>39</sup> Penn...

<sup>40</sup> <https://henrytudorsociety.com/2015/05/14/henry-vii-and-the-potassium-alum-trade/>, taken from Penn's biography

<sup>41</sup> Ideologies of Western Naval Power, c. 1500-1815

<sup>42</sup> England's Medieval Navy, 1066–1509: Ships, Men & Warfare

By Susan Rose

<sup>43</sup> Tudor Sea Power: The Foundation of Greatness

By David Childs

<sup>44</sup> Brodie, D. M. "Edmund Dudley: Minister of Henry VII: (The Alexander Prize Essay)." Transactions of the Royal Historical Society 15 (1932): 133-61. Accessed June 4, 2020. doi:10.2307/3678645.

The deal would allow Henry to supply the money to his own ships under others' names and supply the holy Roman Empire with alum. In England alone his commission clearly paid off as Thomas Penn notes, "Duties payable on each 'quintal' of alum or hundred weight of alum seem to have been in the region of one mark, or 13s 4d. In one import licence alone, the merchant in question was instructed to bring in 13,000 quintals of alum." Another deal at £ 15,166 13s. 4d. was "the biggest single mercantile deal of the reign"<sup>45</sup> illustrating just how important alum was to the early modern economy.

Henry's smart dealings in alum left England in a state of economic freedom and prosperity it had not seen since before the Wars of the Roses. Not only was Henry earning money from selling alum in England domestically, redistribution of excess alum to Spain and other countries less willing to obviously flout papal authority, gave him certain bargaining power on the European stage. Henry gained autonomy for England's wool trade, by gaining power over every material necessary for high-quality cloth making. Nevertheless, because he treated the alum racket brought by anyone else in England exactly as the pope intended, with fines discouraging its sale, Henry VII managed to secure a double-gain for the crown earning money from confiscation and fines on alum not brought by his own ships or from Tolfa, while maintaining good dealings with most merchants. Recorded in Henry's custom's accounts, "A case in 1507 reveals that a number of Suffolk clothiers, including Thomas Spring of Lavenham, were in possession of smuggled alum to the value of £93. 6s. 8d.8".<sup>46</sup> Through his double-dealings, Henry was able to stay in the good graces of the pope with half-hearted apologies for his own conduct to smooth over the papacy's ruffled feathers even while Julius II put out bulls for

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<sup>45</sup> 204, Penn

<sup>46</sup> Ramsey, Peter. "Overseas Trade in the Reign of Henry VII: The Evidence of Customs Accounts." *The Economic History Review*, New Series, 6, no. 2 (1953): 173-82. Accessed June 4, 2020. doi:10.2307/2590950.

Sovereign's capture. As Doctor of Philosophy C. Bolland writes of the futility of Julius' attempts to dissuade Henry from his sales:

Diplomacy with Rome was usually handled by ecclesiastics such as Pietro Griffio, a collector of papal revenues, who was first sent to England to try and interest Henry VII in a crusade and then recalled as a protest against the king's lack of conscience in allowing the importation of Turkish alum into England.<sup>47</sup>

While Henry may have lost the papal ambassador, the loss was brief and posed no lasting damage to the English crown. Meanwhile, making himself indispensable to England's own textile guilds that bought the smuggled alum, gave Henry's rule economic stability and autonomy from the need to call a parliament for emergency funds. Peter Ramsey explains that,

In the first place it seems that the economic achievements of Henry VII's reign have been rather underrated. A period of steady, if unspectacular progress for the first two-thirds of the reign was followed by a marked boom which persisted into the reign of Henry VIII. Cloth exports averaged 50,878 in the first six years of the reign, 81,835 in the last six-an increase of 61 per cent in twenty-four years as compared with an increase of only 45 per cent in thirty-eight years for the following reign. (178)<sup>48</sup>

The marked boom in English cloth exportation coincides with Henry's decision to enter the illicit alum trade and his success with the goods in English and foreign markets. By opening up trade routes and ensuring that his own merchants and dyers were not crippled by the alum monopoly from Tolfa, Henry was able to secure England as a leading power in the woolen industry as well as ensure its economic autonomy from the Catholic Church.

### **Alum and the English Reformation**

Henry VII's actions surrounding alum left his crown economically secure with the promise of future gains to be made from alum and textile exports, unfortunately a series of bad decisions regarding alum by his infamous son, Henry VIII, served to undo much of his father's work. To begin, unlike his father, Henry VIII did not manage his own accounts, instead leaving

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<sup>47</sup> 110. Bolland, Charlotte. *Italian Material Culture at the Tudor Court*

<sup>48</sup> Ibid.

the balancing of the books first to Cardinal Wolsey, a man with ambitions to become the next English pope, and upon Wolsey's disgrace, to Thomas Cromwell. Second, Henry's reliance on Rome for alum within a few years of his ascendance handed the lucrative English cloth gilds directly into foreign control. Henry's mismanagement of his father's careful strategies for control of alum allowed the pope to boycott the alum trade in England when Henry divorced Catherine and began his dissolution of the monasteries. In turn, the boycott fueled Englishmen's resentment of their king as England's most valuable industry suffered. Lastly, a series of ill-planned military campaigns and corruption of the nobility's gifts left Henry with the need, even after the dissolution of the monasteries, to call parliament for funds, an act which unintentionally gave power back to the people of England and was ultimately tied to the alum trade.

The Cardinal's control over England's purse as well as the bankruptcy of Frescobaldi firm in 1518 led England once more to rely solely on outputs from the papal mines at Tolfa.<sup>49</sup> The following paragraphs illustrate the decline of Henry VII's alum dealings and the eventual alum shortages beginning in the 1530s:

\*Note this timeline is in no way comprehensive as the word "alum" alone is mentioned more than fifty times in direct correspondence with successive Popes prior to 1530.

In July, 1509 a list of Grants created directly after Henry VIII's coronation retains della Fava and exempts his goods from customs duties in the following:

Lodowico De la Fava, merchant of Bologna. Licence, by advice of the Council, to buy, clack, bard and clean wools, and to export the same, with woollen cloth, tin, lead, leather or other merchandise, in the King's ship called *Le Regent*, upon the next voyage, from the port of Southampton or elsewhere, beyond the Straits of Marrok (Morocco); also release from the provision of an indenture, dated 13 Dec., 23 Hen. VII, between Richard bp. of Winchester, Sir Thomas Lovell, Edmund Dudley, and Henry Wyatt, for the King, on the one part, and the said Lodowico on the other, relative to the importation of 7,000

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<sup>49</sup> 51, Bolland

quintals of alum; also release from the customs authorized by Act of Parliament, 7 Hen. VII.<sup>50</sup>

As was custom after crowning a new king, Henry VIII had the opportunity to review pertinent acts published during the previous reign as well as appoint new officers for his court. Naturally, Henry chose to continue his father's lucrative relationship with della Fava and to show him special favor in the shipping routes he was allowed to take.<sup>51</sup>

By 1511 however, the Frescobaldi's strain begins to show when Henry approved of more trading with Tolfa:

To all English merchants thus carrying wools "it shall please" the King to grant days of payment of their custom and subsidy "that is to say six years' day after the shipping of any such wools." The King must appoint masters and mariners for the ships and a captain to rule them, "for they be so unruly nowadays that there is no merchant man dare enterprise to take upon him the ordering and governing of the said ships"; but for freight they will gladly pay the 4th penny ("penyng") more than they now pay upon strangers' ships. The King must write to the Pope that his merchants may have yearly, for their money, alum to lade two of the said ships, or else "he that hath it of the Pope to be bounden to lade two of them," one for England and one for Flanders.<sup>52</sup>

By directly encouraging at least equal trading in papal alum, Henry VIII begins to lose the high ground and autonomy his father left him with. Because the Sovereign and Regent had farther to travel in order to pick up their cargos and far more adversaries, this act effectively embargos Henry's own trade. With the assurance that Tolfa's alum gains "the 4<sup>th</sup> penny more", no merchant should desire to enter into the risky alum racket, especially not when he is branded as "unruly" and a "stranger". Thus Henry loses the hard won faith of the mariners and merchants necessary for the racket and artificially inflates the Pope's alum as well gaining the enmity of English cloth gilds for the higher prices they now need to pay for a primary ingredient in their labor.

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<sup>50</sup> Letters and State papers vol...

<sup>51</sup> Similar exemption: William Crane, the King's servant. Licence to export broadcloths, kerseys, hides, and other merchandize not belonging to the Staple of Calais, and import cloths of silk or silk and gold, wines called malveseys, woad, alum, &c., to such amount as will yield in customs not above 20*l.* each way. *Del. Westm.*, 8 Aug. 6 Hen. VIII. S.B. *French Roll*, 6 Hen. VIII. p. 2, m. 8.

<sup>52</sup> Letters and State papers vol...



By August, 1514, Pope Leo X had begun to have success not only with trade bills, but also in prejudicing English judicial courts in favor of papal alum. This success is in direct contrast with the work Henry VII did in Gio. Ambrossio's court case of 1486 to keep English courts free of the papal bull. With tremendous sums of money at risk, Henry VIII, or more accurately his ministers, nevertheless ceded several cases to the papal commissary. Pope Leo X appeals directly to Henry with great success "to have the alum or the proceeds"<sup>53</sup>. With the courts and mariners now opposed to the racket, Leo was free to watch the Frescobaldi scheme flounder and fail, eventually being bound by indenture to Cardinal Wolsey for debts owed to the crown, which continued to give its now-bad investment money until finally the firm declared bankruptcy in 1518.<sup>54</sup>

What proceeded may be described as an economic disaster. While Henry VII had left England's coffers full to bursting with valuable currency, and his son was a valuable bachelor poised to win a wealthy and connected wife, young king Henry VIII proceeded to forgive and forget the dowry of Catherine of Aragon, and then spend lavish amounts on everything from building projects to wardrobes to women to foreign wars. Henry VII had claimed several stipends from other foreign rulers in exchange for making their lives easier, whether by not declaring war or otherwise, but with his death those resources petered out. Thus, when the Frescobaldi scheme failed in 1518, despite it being his chief source of revenue outside of taxes, Henry VIII did not immediately attempt to rebuild it or access another source, but instead

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<sup>53</sup> Letters and State papers, Leo X to Henry VIII: Had before written respecting a cargo of alum, worth 12,000 ducats, belonging to the Apostolic Chamber, which had been consigned to John de Cavalcanti, and confiscated to the Duke of Suffolk. Hears that an arrangement had been made by Cavalcanti to pay the Duke a large sum of money to the prejudice of the Chamber. Begs he will not permit this, but command John Francis de Bardis, papal commissary, the bearer, to have the alum or the proceeds. If Cavalcanti has committed any wrong, begs he may be pardoned at the Pope's instance. Rome, 28 Aug. 1514. Countersigned: P. Bembus.

<sup>54</sup> 1517... Indenture, 22 Feb. 8 Hen. VIII., between Thomas, Cardinal Abp. of York, Lord Chancellor, and John Heron, treasurer of the Chamber, in the King's name, on the one part, and Leonard Freschobald, merchant of Florence, and Anthony Cavalary, merchant of Luke, on the other.—Freschobald and Cavalary, with others, by obligations of 14 July 1515, stand bound to Wolsey, Heron, and Sir Edw. Belknap in 24,000l.,—6,000l. to be paid on 1 Aug. 1523, the same in 1531, 1539, and 1547,—which sum "Jerome Freschobald and his fellowship, Leonard and Anthony and other" owe the King for Turkish alum, for ready money paid to them, respiting the customs and the King's loan money.

unwisely bought further into papal alum, even going so far as to hear Medici claims over "suffered losses in the alum trade in England" requesting "compensation".<sup>55</sup> Henry and his ministers continued at the forefront of the alum trade in England in spite of their poor economic decisions, receiving recommendations for different papal alum merchants as late as 1528. Henry VIII's decisions, while not economically sound, reflect his own confusion at being stuck in the shifting powers of global mercantilism, developing nationalism, his father's political decisions, and a powerful spirituality which was essential to early modern business.

1526 brought with it a series of complex alum disputes between Henry, Pope Clement VII, and Emperor Charles V even while War of the League of Cognac carried on between Charles' Hapsburg dominions and Henry, the papal forces, Milan, the Republic of Venice, and the French.<sup>56</sup> Even as papal representatives prepared to try Henry VIII's marriage to Catherine of Aragon, alum sales made for powerful bargaining chips. Cardinal Campaggio, the future papal legate assigned to judge the legality of the king's marriage in the 1528 hearings was clearly not above being bribed in the form of his alum interests as a letter from him to Henry illustrates, asking Henry:

To favor Ant. Bonvisi, in his suit against the Ghysii concerning alum, and to prevent the case coming before the Camera Apostolica on account of the influence of his adversaries. Has obtained a hearing from the Pope for his proctors, which was favorable. Will give them all the aid he can. Rome, 3 Jan. 1526. *Signed*.<sup>57</sup>

On the 20<sup>th</sup> of October, Pope Clement wrote from Rome directly to Henry: "Requests the King to permit Sebastian de Saulis to import and sell in England for the behoof of the Holy See 13,000 *cantaria* of alum, "Tulfæ nostræ sanctæ Cruciatæ," notwithstanding that Philip de Senis

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<sup>55</sup> JULIUS [DE' MEDICI], Vice-cancellarius, to WOLSEY. John Cavalcant, of Florence, has suffered losses in the alum trade in England, as he will explain to Wolsey. Hopes Wolsey will procure him compensation. Rome, 12 April 1519

<sup>56</sup> Charles was Catherine of Aragon's nephew, the Holy Roman Emperor, intent on seeing his aunt keep her place as queen of England.

<sup>57</sup> Letters and State papers

had maliciously written that they should be detained at the Emperor's instance." The Emperor's ongoing preoccupation with Henry's attempts to annul his marriage with Charles' Aunt (partially leading to Charles' ongoing attack on papal forces), lead to his working to undermine English and Italian interests in alum. Henry's desire to further cement himself in the pope's good graces, lead to one of the greatest economic and political mistakes of Henry's reign.

With the battle against Charles' forces being fought close to home, Pope Clement was in great need of funds to pay his troops in what would be a 4-year war. Thus, in order to secure his allies' support, the pope set about liquidating papal assets in exchange for coin. Even contemporaries were hard-pressed to conceal their opinions about the stupidity of Henry VIII's actions. Writing to Wolsey, Bishop William Knight details the King's reception and reaction to Thomas More's letters, as ambassador to Italy during the conflict, informing Henry of Clement's proposition to trade the Tolfa alum mines for money:

He approves of your letter advising the Pope not to quit Rome, and of your proposition to give the Pope 30,000 ducats. I admonished him of the pleasure and profit he would receive by obtaining the alum mines in Italy. He thinks you should tell the Papal and French ambassadors that these evils have arisen because the King's counsel was not followed, and from the negligence of the French king, and blame them sharply. He thinks the Pope should bestir himself to proclaim a general peace. Ampthill, 11 Oct.<sup>58</sup>

Concerned only with gaining the pope's good graces, Henry ignored the long-term benefits of having control over the supply of European alum. Thus, in a single move, Henry sentenced himself to dealing with an alum shortage in England, which would last years and contribute heavily to the loss of English Royal autonomy.

In the midst of Henry's over-generosity about the Tolfa mines, and almost immediately after England's sketchy role in preventing another alum case calling for the attention of the Camera Apostolica on Campeggio's behalf, Emperor Charles V backed a merchant, Phillip de

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<sup>58</sup> Letters and State papers

Senis, intent on confiscating alum from the commended Sebastian Sauli.<sup>59</sup> Little more than a potential capital-gaining venture and diversionary tactic, the case took up valuable time and money for both English and papal interests, but within the time the alum had been bought by Sauli, its price had increased twofold, earning a healthy profit for the pope who eventually won it. In 1527 however, Charles once again turned the tables on Henry when his forces captured the Holy city and ensured Clement's inability to grant Henry an immediate annulment at that time.

By 1530 the war was over and Clement issued an order to Henry forbidding him to remarry until he might come to a papal verdict, which he reached in 1533, cementing Henry's break with the Catholic Church to marry Anne Boleyn.<sup>60</sup> While Clement never officially excommunicated Henry, he threatened it and stopped the alum trade in England before dying of poison in 1534. Indeed, Chapuys, Spanish ambassador to Charles V wrote to him in 1531 assuring him that the French did not believe that the new Pope would give Henry what he wished. Chapuy even went so far as to outline what the pope would do should Henry marry another, "the Pope, with all his fair show (belles mines), would resist it with all his power, and that to this effect his Holiness had set forth various inconveniences" Likely, at least one of the inconveniences Chapuys refers to, is the papal boycott of Alum going to England. Additionally, the alternate, illegal sales of alum from Cartagena had been stopped due to England's depreciating relationship with Spain.<sup>61</sup>

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<sup>59</sup> (August 1526) In commendation of Sebastian Sauli and his partners, merchants of Genoa, who have sent two ships laden with alum, (fn. 3) to be sold in England by their agents Giromalc and Balthassar de Spinoli. Rome, 25 Aug. 1526

4982. CLEMENT VII. to CARDINAL WOLSEY. Requesting that the price of a certain cargo of alum belonging to Sebastian Sauli, now in the hands of Antonio Bonvixi, of London, may be delivered to Pasquale and Jeronimo Spinuli. Rome, 28 Nov. 1528, pont. 6.

4983. ANTHONY CAVALLARY to [WOLSEY]. Respecting alum in the possession of Sauli, a bankrupt merchant. Spinola claims it, and says Wolsey will soon have it delivered to him. Sauli has never paid the Pope's agent for it, and therefore it belongs to them. Any sale made by him is fraudulent. Expects daily a commission from the papal agents to settle the matter. Sauli bought the alum for 6,000*l.*, to be paid over a long period, and it is now worth 12,000*l.* *Signed*

Requesting his protection against Philip de Senis, executor of Augustine Ghisi, who proposes to infringe a contract about a cargo of alum made with his consent by his co-executor dom. Sigismundus. Refers to the testimony of Russell and Wolsey's secretary, Stephen, (fn. 5) when they were at Rome. *Not Signed*

<sup>60</sup> Britannica

<sup>61</sup> 6, Turton

The Act of Supremacy<sup>62</sup> and Henry's dissolution of the monasteries in England secured his full excommunication by Pope Paul III in 1538, years after its effect may have been beneficial to anyone. What Clement did secure before his death however, would preoccupy Henry until a year before his death 1547.<sup>63</sup> Clement and his successor effectively banned all alum shipments to England, resulting in extreme loss for the English wool trade, which now had to rely on trade with other countries to dye. A note from the state papers mentions that the pope was not only concerned to halt all future alum sales in England, but even those, which would lose him money:

[June 12th 1529] I have sequestered all the alum belonging to the Pope in London, now in the house of Dominico Lomelyn, with orders not to let it go out of his house. I have given notice of it to Pantaline Spynelle, factor to Balthasar Spynelle. The customs amount to 450l., of which Spynelle desires to have the payment respited, as the alum was sequestered.<sup>64</sup>

The cost of shipping the alum out of England and finding a new market for it made the venture more than a small monetary loss, however, it completed its intended goal in crippling Henry's economy.

After losing access to papal alum, Henry VIII proceeded to organize searches for the mineral in all of the wrong places. The issue was three-fold; first, even if Henry was able to find alum in England, a good portion of his subjects would refuse to use it; second, without modern technology they were essentially searching blind; third, and most important, alum lixiviation from shale was a well kept secret, so without any convenient volcanoes in England alum would never appear in a pure form, necessitating a more advanced search for specific types of shale.

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<sup>62</sup> <https://www.parliament.uk/about/living-heritage/transformingsociety/private-lives/religion/collections/common-prayer/act-of-supremacy/>

<sup>63</sup> RICHARDSON, W. C. (1954). *SOME FINANCIAL EXPEDIENTS OF HENRY VIII*. *The Economic History Review*, 7(1), 33–48. doi:10.1111/j.1468-0289.1954.tb01508.x

<sup>64</sup> Letters and State papers

While Henry failed to find any alum in England, he did set about a series of laws forbidding certain foreign importation of wools and other cloth as well as imposing heavy duties to make it less lucrative for foreign cloth to dominate the market. With acts such as "An Acte lymitinge the prizes of Hattes Bonnett & Cappes made the See and brought to be soold this Realme" "An Acte ayenst Reg'tours & gatherers of Wulles" and "An Acte repellinge a graunte latlie made by the Kinges Highnes to the citizens of Yorke for the shippinge of ctayne Wolles unto the Porte of Hull"<sup>65</sup> Henry's administration did show they had some idea of what was going on, with most of these acts appear within less than a year of the papal boycott. Nevertheless, not only did cloth exports drop in this period, but currency in England due to "The Great Debasement" lost much of its value. Thus, all of the autonomy Henry VII had gained through careful politics and exploitation of alum for England was officially over. After years of fighting and negotiating over the precious resource, the Vatican had won, a fact that has farther-reaching impacts for historians than simply another, albeit intriguing, way to look at the reformation.

Alum's value as a political and economic tool for papal powers must not be overlooked in a historical approach to material culture. The Yorkshire Guide, one of the few publications that mention alum during the reign of Henry VIII at all, succinctly explains the quandary England found itself in:

Henry VIII broke with the Catholic church and declared himself head of the Church of England. Off the back of this the Pope refused to supply Alum to England. This meant that the bright coloured textiles production stopped in England as we were unable to gain supply of the dye fixant from Europe in any quantity. There was an urgency to find the correct rocks and produce alum in England and patents were granted for production in Cornwall, Devon and the Isle of Wight. All these failed as we now know the rocks were unsuitable. No alum was produced in England throughout the rest of the Tudor period.<sup>66</sup>

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<sup>65</sup> The Statutes of the Realm: Printed by Command of His Majesty King George the Third, in Pursuance of an Address of the House of Commons of Great Britain. From Original Records and Authentic Manuscripts, Volume 3

<sup>66</sup> <http://yorkshiresbestguides.co.uk/the-history-of-alum-production-and-the-links-to-the-yorkshire-coast/>

While this source is not entirely reliable, owing much of its information to *The Floating Egg* by Roger Osborne, an only partially historical and sometimes fictitious record of alum production on the Yorkshire Coast, the guide scrapes at the primary issues England's previously lucrative textile industry faced during this period. Loss of access to papal alum constituted a huge loss for English exports, a fact Henry himself was only too aware of. Nevertheless, the specific brand of alum piracy combined with harsh economic policy made popular earlier in Henry VIII's reign, saw small quantities of alum reaching its shores even during the boycott. While production of colored cloth certainly stalled and accounted for huge losses in the textile industry, on an individual level it is likely most people simply dyed their cloth with inferior materials or amounts of alum, contributing to the depreciation of quality and quantity we see in museums today. Because these cloths were known to fade their value for posterity was reduced. The alum shortage in England caused by papal powers succeeded in creating a textile dark-age for England which illustrates how the reformation was not only a political and theological movement, but also an economic one.

## **Conclusion**

As a textile historian, it can be difficult to move away from the study of beautiful clothing to look at things that are not there, but in several trips to England I took, and a rather rigorous approach to scouring museums, I was impressed by a lack of material available from the mid-sixteenth century. This essay appeared as much from my curiosity on the subject of early dye mordents as out of a very real frustration at finding few garments from this period.

The early modern market has been a somewhat under-utilized branch of historical inquiry as related to interdisciplinary studies. I hope to have illuminated another way to tell history through following a commodity and noting its importance to Reformation-era political thought. I

find it difficult to pin down my research as any one branch of history, as it is vitally important not only to know the chemical composition of alum, but also its tumultuous back story. By no means is the research on this fascinating rock finished; I hope to use this work as an introduction to further studies of alum in history.

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